REMARKS

This application has been reviewed in light of the Office Action dated June 25, 2003. Claims 1-20, 32, 33, 35, and 36 are pending in this application. Claims 21-31, 34, and 37-39 have been cancelled, without prejudice or disclaimer of subject matter; these claims will not be mentioned further. Claims 1, 3, 4, 5, 7, 9, 32, 33, 35, and 36 have been amended to define still more clearly what Applicant regards as his invention. Claims 1, 7, 32, 33, 35 and 36 are in independent form. Favorable reconsideration is requested.

Applicant encloses herewith a Supplemental Information Disclosure Statement.

First, Applicant gratefully acknowledges the indication that Claims 16, 17, 19, 20, 32, 33, 35, and 36 include allowable subject matter and would be allowable if rewritten in proper independent form. Claims 32, 33, 35, and 36 have been so rewritten and are now allowable.

The Office Action rejected Claims 1-6, 12-15, 18, 29-31, and 37 under 35 U.S.C. § 103(a) as being obvious from U.S. Patent No. 6,107,655 (Guidash) in view of U.S. Patent No. 5,856,686 (Watanabe et al.); and rejected Claims 7-11 and 38 as being obvious from Guidash in view of U.S. Patent No. 6,466,265 (Lee et al.). Applicant respectfully traverses these rejections.

Applicant submits that amended independent Claims 1 and 7, together with the remaining claims dependent thereon, are patentably distinct from the proposed combination of the cited prior art at least for the following reasons.

The aspect of the present invention set forth in Claim 1 is an image pickup apparatus that includes a plurality of unit cells arranged in an array, with each unit cell including a plurality of photoelectric conversion portions and a common circuit for inputting signals from the plurality of photoelectric conversion portions and outputting the

signals to the outside of the unit cell. The apparatus also includes a first addition portion for adding the signals from the plurality of photoelectric conversion portions at an input portion of the common circuit in the unit cell, and a second addition portion for adding the signals from a plurality of unit cells outside of the unit cell.

Notable features of Claim 1 are the two addition portions. The first addition portion adds signals from a plurality of photoelectric conversion portions at an input portion of a common circuit included in a unit cell, and a second addition portion adds added signals from a plurality of unit cells at the outside of the unit cell. Support in the specification for these features can be found at least from page 9, line 25, to page 11, line 1, with reference to Figure 4.

Guidash, as understood by Applicant, relates to an active pixel image sensor with a shared amplifier read out. The Office Action states that Guidash discloses an image pickup apparatus that includes a plurality of unit cells arranged in an array, first addition means, and multiple transfer gates, and states that Figure 3b provides support for these assertions. Applicant submits that in Figure 3b, signals of pixels 11 and 12 are read out respectively into S/H circuits 80 and 90 through a common circuit 32, 34, 36. Applicant submits, however, that nothing has been found in Guidash that would teach or suggest the features of the first and second addition portions, as recited in Claim 1.

Watanabe et al., as understood by Applicant, relates to an amplifying type of solid-state imaging apparatus and method for driving the same. The Office Action states that Watanabe et al. teaches a horizontal scanning circuit for outputting signals, and states that Figure 8 provides support for this assertion. Applicant notes that Figure 8 merely shows signals from pixels being output to a signal output line. Applicant submits, however, that nothing has been found in Watanabe et al. that would teach or suggest the features of the first and second addition portions, as recited in Claim 1.

Applicant submits that, at least for the reasons discussed above, the proposed combination of Guidash and Watanabe et al., assuming such combination would even be permissible, would still fail to teach or suggest the features of the first and second addition portions, as recited in Claim 1. Accordingly, Applicant submits that Claim 1 is patentable over these two patents, taken separately or in any proper combination.

The aspect of the present invention set forth in Claim 7 is an image pickup apparatus that includes a plurality of unit cells arranged in an array, each unit cell including a plurality of photoelectric conversion portions and a common circuit for inputting signals from the plurality of photoelectric conversion portions and outputting the signals to the outside of the unit cell. The apparatus also includes a common output line to which a plurality of signals from the plurality of unit cells are output sequentially, and a control portion for effecting control so that the signals from a predetermined number (more than two) of photoelectric conversion portions for outputting signals of the same color are added outside of the unit cell, and the added signals are output from the common output line. The control portion of the apparatus effects the control so that the signals from the plurality of photoelectric conversion portions included in the unit cell are not added in the unit cell.

Notable features of Claim 7 include the common output line and control portion, which effects control so that the signals from the plurality of photoelectric conversion portions included in the unit cell are not added in the unit cell. Support in the specification for these features can be found at least at page 11, lines 2-24, with reference to Figure 5.

Applicant submits that nothing has been found in Guidash that would teach or suggest the common output line and control portion, which effects control so that the signals from the plurality of photoelectric conversion portions included in the unit cell are not added in the unit cell, as recited in Claim 7.

Lee et al, as understood by Applicant, relates to parallel output architectures for CMOS active pixel sensors. Applicant notes that Lee discusses parallel output of signals of a same color. Applicant submits, however, that nothing has been found in Lee et al. that would teach or suggest the common output line and control portion, which effects control so that the signals from the plurality of photoelectric conversion portions included in the unit cell are not added in the unit cell, as recited in Claim 7.

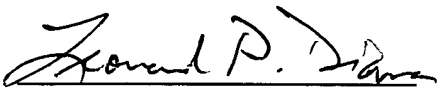
Applicant submits that, at least for the reasons discussed above, the proposed combination of Guidash and Lee et al., assuming such combination would even be permissible, would still fail to teach or suggest the features of the common output line and control portion, as recited in Claim 7. Accordingly, Applicant submits that Claim 7 is patentable over these two patents, taken separately or in any proper combination.

The other rejected claims in this application depend from Claim 1 or Claim 7, discussed above, and, therefore, are submitted to be patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, individual reconsideration of the patentability of each claim on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and early passage to issue of the present application.

Applicant's undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,



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